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ABSTRACT

This report highlights findings of a study of the feasibility of articulating high school-community college career education programs and extending such programs to the baccalaureate degree. Part 1 offers background on articulating career education programs. Part 2 deals with articulated career education programs offered by high schools and community colleges. Part 3 describes articulation between community colleges and four-year institutions. Part 4 summarizes the feasibility of "2 + 2 + 2" programs--that is, from high school through the community college to the baccalaureate degree. Evidence from California and 11 other states is considered. Finally, Part 5 sets forth conclusions about articulated career education programs and seven recommendations: provision of state funds for pilot articulated career education project development, inclusion of an evaluation component in the pilot project, definition of acceptable articulation practices and development of standards for vocational courses for college credit, development of procedures for assessment of high school students enrolling for community colleges courses, analysis of the role of adult education in the articulation process, assignment of California Articulation Numbers to career education courses, and establishment of a computerized clearinghouse for information about articulated career education programs. (YLB)

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Summary

In its 1986 session, the Legislature enacted Assembly Bill 3639 (Bradley), which directed the California Postsecondary Education Commission to study the feasibility of articulating high school-Community College career education programs and extending such programs to the baccalaureate degree, and to make recommendations about State funding for pilot articulated career education programs by January 1, 1988.

The Commission undertook its analysis by building on two of its recent studies: one on transfer, articulation and collaboration between two- and four-year institutions in 11 states, and the other on ways to strengthen transfer and articulation policies and practices in California. To aid its analysis, the Commission also used data from a statewide survey that the Chancellor's Office of the California Community Colleges commissioned of high school-Community College articulation in the State.

The resulting report consists of five major sections, in addition to an Executive Summary on pages 1-2:

- Part One on pages 3-4 presents background information about the study;
- Part Two on pages 5-12 describes articulation of career education programs between high schools and Community Colleges;
- Part Three on pages 13-20 describes articulation between Community Colleges and four-year institutions;
- Part Four on pages 21-24 summarizes articulation from the high school level through the baccalaureate degree both in California and other states; and
- Part Five on pages 25-28 presents the study's conclusions and recommendations.

The Commission adopted this report at its meeting on December 14, 1987, on the recommendation of its Policy Development Committee. Additional copies of the report may be obtained from the Publications Office of the Commission at (916) 322-8031. Questions about the report may be directed to Dorothy M. Knoell of the Commission staff at (916) 322-8015.

ARTICULATING CAREER EDUCATION PROGRAMS FROM HIGH SCHOOL THROUGH COMMUNITY COLLEGE TO THE BACCALAUREATE DEGREE

A Report to the Governor, Legislature, and Educational Community in Response to Assembly Bill 3639 (Chapter 1138, Statutes of 1986)

CALIFORNIA POSTSECONDARY EDUCATION COMMISSION
Third Floor • 1020 Twelfth Street • Sacramento, California 95814-3985

COMMISSION REPORT 87-48
PUBLISHED DECEMBER 1987

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Executive Summary

IN its 1986 session, the Legislature enacted Assembly Bill 3639 (Bradley), which directed the California Postsecondary Education Commission to study the feasibility of articulating high school-Community College career education programs and extending such programs to the baccalaureate degree, and to make recommendations about State funding for pilot articulated career education programs by January 1, 1988.

The Commission undertook its analysis by building on two of its recent studies: one on transfer, articulation and collaboration between two- and four-year institutions in 11 states, and the other on ways to strengthen transfer and articulation policies and practices in California. To aid its analysis, the Commission also used data from a statewide survey that the Chancellor's Office of the California Community Colleges commissioned of high school-Community College articulation in the State.

This remainder of the report consists of five major sections, of which Part Five on pages 25-28 contains the Commission's conclusions and the following seven recommendations:

Recommendation to the Governor and the Legislature

1. The Governor and the Legislature should provide funds in the 1988-89 State budget to support the development of pilot articulated career-education projects ("2+2+2") along the general lines proposed in the Budget Change Proposal submitted by the Chancellor's Office for the Community Colleges.

The Commission suggests that provision be made to fund a number of different types of models -- for example, (1) an extension of an ongoing high school-Community College program, probably in electronics; (2) a program for students who "stop out" for employment at some time (or times) before completing a baccalaureate degree; (3) a University-linked program to meet the needs of transfer students in social science or general studies majors -- perhaps to prepare them for careers in the human services; (4) a project that would include one or more independent colleges and universities, perhaps using the California Academic Partnership Program (CAPP) as a model for funding; and (5) extension to the high schools of several programs that have been successfully articulated by Community Colleges and the State University.

Recommendation to the State Board of Education and the Board of Governors of the California Community Colleges

2. Recognizing the high cost of comprehensive longitudinal studies of students in career education programs, the Commission recommends that the Boards insure that specially funded pilot projects for articulated programs include an evaluation component that provides for student follow-up to and through the next higher level of education or to employment.

Recommendations to the Chancellor's Office of the California Community Colleges

3. The Chancellor's Office, in consultation with Community Colleges offering extensive coursework for high school students, should examine and make recommendations, where necessary, about (1) definitions of acceptable articulation practices in career education and (2) standards for vocational courses offered to high school students for college credit in terms of both course prerequisites and competencies.

4. The Chancellor's Office, in consultation with Community Colleges that have adopted assessment-counseling-placement programs as part of the matriculation process, should consider and make recommendations about ways that high school students enrolling in Community College courses for credit should be subject to the assessment procedures and standards that apply to regularly enrolled students.

5. The Chancellor's Office should analyze and evaluate the kind of high school-Community College articulation that involves Regional Occupational Centers/Programs and other non-credit adult education providers to determine (1) their potential for contributing to extended career education leading to a baccalaureate degree, and (2) barriers to student progress from non-credit to credit programs for career preparation which should be reduced or eliminated.

Recommendation to the California Articulation Number Coordinating Committee

6. The Coordinating Committee should make whatever changes are necessary in its operating principles to allow and encourage the assignment of CAN numbers to career education courses that are offered by the Community Colleges and the State University but not necessarily by the University.

Recommendation to the Intersegmental Coordinating Council

7. The Council should consider the feasibility of its becoming a computerized clearinghouse for information about articulated career education programs or, if necessary, make a recommendation to the California Education Round Table about some alternative placement of this service (pp. 27-28).

In addition, the Commission reproduces in Appendix D on page 39 six recommendations from its recent report on transfer and articulation in California that it believes are also pertinent to this report and that deal with the following topics:

- The need for the Governor and the Legislature to give broad policy direction to the segments regarding the flow of students from California's high schools through its colleges and universities;
- The role of the Intersegmental Coordinating Council in facilitating transfer and articulation;
- The desirability of campus-to-campus and regional articulation on a voluntary basis;
- The endorsement of the California Articulation Number (CAN) system;
- The need for strong high school subject-matter preparation for students planning to attend a Community College; and
- Procedures for segmental program review to insure articulation between levels and segments.

1 *Background on Articulating Career Education Programs*

Origins of the report

Assembly Bill 3639 (Bradley; enacted as Chapter 1138, Statutes of 1986, and reproduced in Appendix A on pages 29-30) directed the California Postsecondary Education Commission to study the status and feasibility of articulating high school and Community College career education programs ("2+2") and extending them to a baccalaureate degree to be awarded by four-year institutions ("2+2+2"). The Commission is to report its findings to the Legislature and others by January 1, 1988, together with suggestions for funding pilot projects.

Involvement of an advisory committee

As specified in AB 3639, the Commission staff has involved representatives of a variety of groups in the conduct of this study. Its advisory committee on the project is listed in Appendix B on page 31.

The committee met once to review the prospectus and plans for gathering information and again as the study neared completion, and its members have agreed to continue to work with staff on follow-up activities that are expected to include a Commission-sponsored seminar on the topic.

Related activities

The Board of Governors of the California Community Colleges identified high school-Community College articulation as a priority area for study in its Basic Agenda, and this past spring the Chancellor's Office contracted with Rancho Santiago College to conduct a statewide survey of high school-Community College articulation activities -- both current and planned -- not only in vocational education but also in basic and general education and student services. The survey also asked for information about problems and barriers that high schools and Community Colleges have encountered in establishing these articulated programs.

The contractor has submitted its report of findings and conclusions to the Chancellor's Office, which in turn presented it to the Board of Governors at its December 10-11 meeting. Information about career programs gathered as part of that survey comprises a major source of data for this present report, although the Commission has used that information in preparing this report without reference to the contractor's analysis of data and its conclusions therefrom.

Since May 1987, the California State Plan for Career-Vocational Education Steering Committee -- an interagency group of educators and administrators -- has been developing a mission statement and a set of goals to guide the future of vocational education in California. To date, it has developed draft materials yet to be approved and adopted as policy. However, the following list outlines the issues it has selected as priorities and for which it is preparing, reviewing, and revising detailed descriptions:

1. Access issues and goals;
2. Accountability issues and goals;
3. Articulation issues and goals;
4. Funding issues and financing and funding goals;
5. Interagency linkage issues and goals;
6. Private sector linkage and goals;
7. Program planning and research issues and goals;
8. Program delivery and quality issues and goals;
9. Public information and relations issues and goals; and
10. Staffing issues and goals.

Still another activity that needs to be noted here is the three-phase funding of a series of 21 high school-Community College articulation projects in vocational education that has been a joint venture of the State Department of Education and the Community

College Chancellor's Office. These projects are relatively new and appear to have anticipated in part the legislation authored by Assemblyman Bradley. In addition, the Chancellor's Office has submitted a Budget Change Proposal to the Department of Finance for pilot "2+2+2" projects.

Definition of concepts

Two concepts require definition here because of their special use in this report -- "career education" and "articulated career education program."

- The Commission uses the phrase *career education* as the parameter of this report rather than the phrase *vocational and professional programs* used in AB 3639, since *career education* encompasses a broad spectrum of career-ladder educational programs leading to employment that are offered by schools and colleges at the undergraduate level, while *vocational and professional programs* connotes the extremes of a continuum from low-level training that is not part of a career ladder to the high-level graduate programs for professions such as medicine and law. For purposes of the study, the Commission defined *career education* as organized learning experiences offered by schools and colleges that have sequence and continuity and lead to successively higher levels of employment on a particular career ladder; it may include courses in basic skills and general education as well as those related to employment, work experience, and educational and career guidance.

- The phrase *articulated career education program* also has special meaning in this report and is defined as a series of learning experiences that are organized so as to insure that students pursuing formal education for a particular career field are able to move from one level of education and employment to the next highest level of a career ladder with a minimum amount of duplication or overlap in learning, loss of time in school, and disruption in employment.

Some career education programs, of course, are offered at only one level of the education system -- for example, the high-level professions at the post-baccalaureate level. In contrast, articulated career education programs are offered at more than one level of education. Nursing offers one such example, in that students may begin their nursing-oriented education in high school, earn an associate degree and licensure as a registered nurse in a Community College program, and continue at some point to a baccalaureate degree in nursing in order to qualify for a higher level of employment in nursing or for graduate work in the career field. Similarly, youth services is a rather new career field in which students may do supervised volunteer work for credit while in high school, move up to an associate degree program in the human services, and some time later complete a baccalaureate program.

Limitations of the study

This study could not deal with vocational education issues that are not central to the question of the feasibility of extending career education programs to the baccalaureate degree. For example, some problems and barriers identified by the Community Colleges in the survey of their articulated programs and practices involving high schools cannot be covered in this report's conclusions and recommendations. Neither will there be attention to questions of the quality of or need for vocational education courses at the secondary level, nor the appropriate role and mission of these two segments in vocational education. These questions and related issues are critically important to the success of current educational reform efforts but are far beyond the scope of this study.

Organization of the remainder of the report

Because of the direction given by the statute on which the study is based, this report deals in Part Two with articulated career education programs offered by high schools and Community Colleges, and then in Part Three with programs offered by Community Colleges and universities. Part Four deals with the feasibility of "2+2+2" programs -- that is, from high school through the Community College to the baccalaureate degree, based on the evidence from California and from other states regarding articulation of career education. Finally, Part Five sets forth the Commission's conclusions about articulated career education programs and its recommendations regarding them.

2 *High School - Community College Articulation*

Feasibility of articulated programs

Assembly Bill 3639 called for an assessment of the feasibility of articulating career education programs that begin in the junior year of high school and extend through Community College to the associate degree as a first step in developing six-year or "2+2+2" programs leading to the baccalaureate. That bill was enacted into statute in 1986, at a time when the State Board of Education and the Board of Governors of the California Community Colleges accepted and then supported the concept of articulated career education programs by approving the use of federal vocational education funds for 21 projects to develop and implement high school-Community College articulation in a variety of career fields.

A list of these pilot projects appears in Display 1 on the next page. As can be seen, 13 of the projects were first funded at the Phase One level -- a planning phase that was designed for institutions to begin the planning process that would result in an implementation model for articulation during the current academic year.

Seven of the projects were at Phase Two -- an implementation phase designed for institutions that had a planning model for articulation and simply needed to implement part or all of that model.

Only one project -- that of the Los Rios Community College District and Sacramento area schools -- was at the Phase Three level -- an institutionalization phase that was designed for institutions with an established articulation model that could show evidence of having implemented the model in previous fiscal years and only needed assistance in expanding that model.

Since the programs are all so new, they cannot be tested in terms of student outcomes -- persistence, academic success, and placement -- until more time has elapsed but the curricular feasibility of "2+2" articulation in many vocational and technical areas has now been demonstrated by virtue of these programs having been developed cooperatively.

Extent and nature of articulation

As noted in Part One, information from a statewide survey of high school-Community College articulation programs and practices was made available by the Community College Chancellor's Office to Commission staff for use in this report. The contractor surveyed California's Community Colleges near the end of the 1986-87 school year with regard to articulation with high schools, with special emphasis on career education programs in order to obtain information for the Commission.

The survey asked questions about (1) fields in which curricula and courses have been articulated, (2) high schools with which agreements have been reached, (3) numbers of high school juniors and seniors who were enrolled in such courses and programs in 1986-87, (4) how many students who were previously enrolled had continued on to the Community Colleges, (5) the first year in which each articulated program was offered at the high school level, (6) the role of acceleration in articulated career programs, (7) barriers or problems which either students or the institutions involved have encountered in developing and offering such programs, and (8) plans and aspirations for developing programs in additional career fields.

Commission staff tabulated and analyzed responses to selected questions on the survey in preparing this report. Display 2 on page 7 shows the number of colleges that responded indicating that some type of articulated career education program was either (1) currently offered or (2) being planned or considered in 46 vocational areas. Respondents were given no taxonomy of programs for use in this part of the survey and, as a result, the degree of specialization and program titles varied widely among the 95 respondents. Commission staff combined some sub-specialties in preparing the display -- for example, by including auto body, auto services, auto mechanics, and other specialties or terminologies under "Automotive" -- one result of which may be to underestimate the total number of programs being articulated, since a much larger number of options or

DISPLAY 1 *Federally-Funded Pilot Programs in California That Link High School and Community College Career Education*

Educational Agency	Instructional Area	1986-87 Funding
Phase One: Planning		
Riverside County	All areas	$15,000
Allan Hancock College	Word Processing, Secretarial, Accounting, Auto Mechanics, Auto Body	15,000
Saddleback College	All areas	5,507
Sweetwater Unified High School District	Auto, Auto Services, Business	15,000
Foothill College	All areas	15,000
Sierra College	Auto Technology, Early Childhood Education, Electronics	15,000
El Camino Community College District	Electronics	12,393
Fremont Unified High School District	Word Information Processing, Business Secretarial	6,000
South County Community College District	Industrial Technology, Health, Business	15,000
Diablo Valley College	Business	15,000
State Center Community College District	All areas	15,000
Palomar College	Drafting, Computer Assisted Design, Welding	15,000
Chaffey College	All areas	15,000
Phase Two: Implementation		
San Mateo	Electronics	32,354
North Orange County Community College District	Health Technician, Business Education, Home Economics and Related Occupations	45,000
Rio Hondo Community College District	Electronics, Office, Nursing	45,000
Compton Community College District	Machine Technology, Auto Technology, Welding	44,820
North Santa Clara County Regional Occupational Program	Drafting, Machine Technology, Automotive, Communications Technology, TV Production	45,000
Cerritos College	High Technology Curriculums, Engineering, Industrial Technology, Industrial Education	45,000
Hartnell College	Computer Science, Drafting, Body and Fender Repair, Auto Technology, Business Education, and others	44,619
Phase Three: Institutionalization		
Los Rios Community College District	Office Administration, Business Administration, Electronics, Auto Mechanics, Forestry, Welding, Accounting, Computer Science	50,000

Source: California State Department of Education.

Display 2 Numbers of High School-Community College Articulated Career Education Programs

Vocational Area	Programs Operating in 1987-88	Programs Planned or Desired
Accounting	7	4
Administration of Justice	2	2
Aerospace Manufacturing	0	1
Agriculture	1	8
Air Conditioning/Refrigeration	0	1
Animal Science	0	1
Automotive	27	9
Aviation Careers	1	2
Building Trades/Operating Engineering	1	0
Business Education (General)	7	6
CAD/CAM	1	0
Carpentering/Construction	0	5
Communications Technology	0	1
Computer/Information Systems	8	13
Cosmetology	2	1
Diesel Technology	0	2
Drafting	12	15
Early Childhood Education/ Child Care	6	6
Electrical	0	1
Electronics	10	20
Fashion Technology	0	1
Fire Science	1	1
Foods	4	6
Forestry	3	2
Graphics	0	5
Health Professions	5	15
Home Economics	0	3
Hotel/Motel Management	0	2
Machine Shop/Tools	4	4
Manufacturing Technology	1	1
Metals Technology	1	0
Office Administration	14	10
Ornamental Horticulture	2	2
Petroleum Technology	0	1
Photography	0	2
Plastics	1	0
Police Science	1	0
Radio/TV	1	2
Real Estate	0	1
Robotics	0	1
Secretarial Science	3	6
Trade/Technology	1	1
Travel	0	1
Welding	6	8
Wildlife/Conservation	1	0
Word Processing	5	2

Source: California Postsecondary Education Commission.

specializations than these 46 were reported by the colleges.

Not surprisingly, the automotive programs were mentioned most frequently as programs already articulated by high schools and 27 Community Colleges, but business programs, which are listed in the display under five headings, totaled 36 -- accounting, seven; business education, seven; office administration, 14; secretarial science, three; and word processing, five. Other programs that at least ten colleges reported as articulating with high school programs are drafting (12) and electronics (10).

The five areas which the colleges identified most frequently as planned or desired were electronics, 20; drafting, 15; health professions (including nursing), 15; computer/information systems, 13; and office administration, 10. For one-third of the areas on the list, the responding Community Colleges did not yet have programs in operation. Among them, the two areas mentioned most frequently for future planning are carpentering/construction and graphics (five each). Some colleges reported that future plans included articulation in all vocational areas but no attempt was made to include such responses in the tabulation by area.

Display 3 on pages 9-10 shows whether colleges reported any articulated programs as (1) in operation before 1987-88, (2) planned to begin in 1987-88, (3) in a planning stage, or (4) desirable for the future. In quantitative terms, 33 of the 95 colleges reported operating high school-articulated programs in 1986-87, and most of the 33 were also planning new ones. An additional 23 colleges were planning new programs to be offered in 1987-88, and 20 were making plans for programs last year but were not ready to offer them this year. Only 17 said that they had no plans or expectations in this area of articulation, while two expressed interest in developing programs but had no specific plans to do so.

Among the 22 colleges that reported data on their enrollments in these courses and programs, they reported a total of 4,268 high school juniors and seniors as enrolled in 1986-87, with a range from two to 1,000 students and a median of 134.

At least two problems limit the accuracy of information about programs, however:

- The first is the variation in the respondents' responsibilities for articulation at the campus level

Display 3 Status of High School Community College Articulated Career Education Programs, by Community College, as reported in Spring 1987

Community College	Program Now Operating	Planned for 1987-88	Planning Now	Desirable for the Future	None
Allan Hancock College		X	X		
American River College	X		X	X	
Antelope Valley College			X		
Bakersfield College	X				
Barstow College		X	X		
Butte College			X	X	
Cabrillo College	X		X	X	
Cañada College					X
Cerritos College	X			X	
Cerro Coso Community College					X
Chabot College	X	X			
Chaffey College	X	X			
Citrus College			X	X	
Coastline Community College	X			X	
College of Alameda					X
College of San Mateo	X		X		
College of the Canyons	X			X	
College of the Redwoods	X				
College of the Sequoias		X	X	X	
College of the Siskiyous					X
Columbia College			X		
Crafton Hills College		X		X	
Cuesta College					X
Cuyamaca College		X	X		
Cypress College		X	X		
De Anza College	X		X	X	
College of the Desert			X	X	
Diablo Valley College		X			
East Los Angeles College					X
El Camino College			X		
Feather River College	X				
Foothill College					X
Fresno City College		X	X		
Fullerton College		X		X	
Gavilan College	X		X	X	
Glendale Community College			X	X	
Golden West College		X			
Grossmont College	X	X			
Hartnell College		X	X	X	
Imperial Valley College				X	
Irvine Valley College					X
Kings River Community College			X		
Lake Tahoe Community College	X		X		
Laney College			X	X	
Lassen College					X
Long Beach City College	X				
Los Angeles Harbor College		X			
Los Angeles Mission College					X

(continued)

Display 3, continued

Community College	Program Now Operating	Planned for 1987-88	Planning Now	Desirable for the Future	None
Los Angeles Pierce College		X	X		
Los Angeles Southwest College	X				
Los Medanos College		X	X		
Merced College	X		X	X	
MiraCosta College	X				
Mission College			X	X	
Modesto Junior College		X			
Monterey Peninsula College			X		
Moorpark College			X	X	
Mt. San Antonio College		X	X	X	
Mt. San Jacinto College				X	
Napa Valley College					X
Ohlone College					X
Orange Coast College			X	X	
Oxnard College	X				
Palo Verde College					X
Palomar College			X		
Pasadena City College	X	X	X	X	
Rancho Santiago College	X				
Rio Hondo College	X	X	X	X	
Riverside Community College			X	X	
Sacramento City College	X				
Saddleback College		X	X	X	
San Bernardino Valley College	X				
San Diego City College	X		X	X	
San Diego Mesa College					X
San Diego Miramar College			X	X	
San Francisco Community College Centers			X	X	
San Francisco City College	X	X	X	X	
San Joaquin Delta College					X
San Jose City College	X				
Santa Barbara City College		X	X	X	
Santa Monica College		X			
Santa Rosa Junior College		X	X	X	
Shasta College	X				
Sierra College		X	X	X	
Skyline College		X			
Solano Community College			X		
Southwestern College		X		X	
Taft College			X		
Ventura College	X				
Victor Valley College			X		
Vista College	X				
West Hills College	X				
West Los Angeles College					X
West Valley College					X
Yuba College	X		X		

Note: No responses were available for analysis from 11 colleges.

Source: California Postsecondary Education Commission.

-- student services staff, vocational education administrators, general instructional administrators, and admissions/records/school relations staff. Their knowledge in this area and their understanding of the questions varied with their positions. Also, the timing of the survey -- at the end of the school year -- reduced their opportunity to consult with other staff about them.

- A second problem is the response by 17 of the colleges that they had no current or planned activity involving articulation with high school programs and courses, when Commission staff knew in some instances that such activity had been going on -- for example, in offering Community College courses to high school students. The negative responses may have resulted from a more restrictive definition of articulation than that used by other colleges or a lack of knowledge of such activity on the part of the respondents. In any case, the level of current activity appears to be underestimated from the survey results.

Thus the responses are in a sense only indicative of a high level of interest and activity in this area of curriculum and instruction.

Articulation issues raised by the data

Analysis of information from the statewide survey appears to raise issues about the applicability to the baccalaureate degree of a number of courses and programs that are presently articulated at the high school-Community College level.

Definition of articulation

The first issue involves differing definitions of the term *articulation*, in regard to its implementation. Traditionally, the term is defined as a process for developing sequence and continuity in courses and programs taught at different levels by different segments -- in this study, high schools, Community Colleges, and four-year institutions. However, respondents to the Community College survey, which was limited to high school-Community College articulation, appear to include in the definition (1) the offering of Community College courses to high school students for college credit; (2) developing course equivalencies for the purpose of advanced standing, sometimes with college credit awarded as well; and (3) challenge examinations for college credit for students wishing to skip entry-level courses; as well as "2+2" sequences of courses with appropriate prerequisites for enrolling at the next level. The first two practices contribute to acceleration of students through vocational programs to entry-level jobs but may not promote retention to the degree.

Award of college credit to high school students

A second issue involves the awarding of college credit to high school students who enroll in vocational courses offered by Community Colleges, sometimes at the high school site. The issue is the appropriateness of the course for college degree credit for students who may not meet course prerequisites in basic skills or academic subject-matter, especially if these students want to use the credit in pursuing a baccalaureate degree. The Board of Governors has adopted new, more strict standards for degree-credit courses, and it is not clear at this time whether vocational courses taken by high school students will meet these standards or whether the courses will be adapted to the levels of competency that the high school students exhibit who enroll in them. Such matters involve the reading level of textbooks, requisite proficiencies in mathematics, and scope of the course generally.

High school conditions

A third issue is whether the present form of articulation is sound educational practice or simply the Community Colleges' response to a perceived weakening of high school vocational education programs -- a condition resulting from inadequate funding of secondary education and increased high school graduation requirements that make it difficult for students to enroll in vocational courses for high school credit, which in turn leads to diminished offerings at this level. Issues of high school and Community College roles and mission in vocational education are implied by the analysis of articulation practices and need to be addressed but are beyond the scope of this report.

Programs being articulated

A fourth issue is the nature of the career programs

being articulated at this time and their potential for articulation with baccalaureate-degree programs. Program areas that are now being articulated by the largest number of colleges but that appear to hold little promise for articulation at the baccalaureate-degree level include automotive, some business options, drafting, and welding. Electronics may be the present and future area in which such articulation is most feasible, together with computer/information sciences, health occupations, early childhood education, and some areas of business.

Thus the future may offer more promise than the past for articulation through the baccalaureate degree, but the number and scope of areas that might become candidates for such articulation appear limited at this time.

Barriers to articulation

College respondents noted a number of problems relating to the high school students' ability or interest in moving to the next level in an articulated program. Nursing offers one example of problems related to ability, in that students completing a vocational nursing or nurse's assistant program in high school may not be prepared to move directly into a Community College registered nurse/associate degree program without further work in the basic sciences. Food technology offers an example of a problem related to student interest or motivation, where high school students completing a program that includes some Community College coursework are more likely to enter the labor market full time than to continue their studies at a Community College.

Limited information about students

The belief is widespread that low-income Black and Hispanic high school students are "tracked" into vocational programs leading to low-status jobs or to no jobs at all. Data from the statewide survey cannot answer this issue because the survey did not gather information about the characteristics of the students in these articulated programs. Questions thus remain about the extent to which such disadvantaged students are enrolling in articulated career programs while in high school, whether they are succeeding in courses offered for Community College credit, whether the activity is increasing retention to high school graduation, and how -- if at all -- they are benefiting from such articulation in terms of either employment opportunities or further formal education after high school graduation.

Observations

The focus of this report is the feasibility of developing articulated career education programs that begin during the last two years of high school and continue through the Community College to the baccalaureate degree, rather than high school-Community College articulation that ends with an associate degree or certificate. The State boards that are responsible for secondary education and Community Colleges have already made a judgment about the feasibility of articulated career education programs leading to associate degrees and certificates by approving funding for 21 pilot projects, and there is no evidence at this time that their judgment should be challenged.

Pertinent to the question of extending career education programs to the baccalaureate degree is the finding that high schools and Community Colleges have tended to focus articulation efforts on vocations in which entry-level courses may be taught at either level -- often for college credit or advanced placement -- and that do not easily lend themselves to the development of career and related educational ladders. Emphasis is on the trade-industrial and business occupations, rather than human services and technologies, with the exception of electronics.

Finally, what Community Colleges reported in the survey was more often in the nature of course equivalencies than articulation of courses from one to the next higher level. In other words, Community Colleges work with high schools in their geographic area to identify vocational courses that are taught at both levels and that have common objectives or outcomes in terms of expected competencies. Courses in typing/word processing and auto mechanics are examples, with high school students who complete them successfully receiving college credit or ad-

vanced placement if they enroll in the Community Colleges after graduation. This "articulation" practice may result in acceleration to an associate degree, certificate, or employment without a formal award, but it does not appear to support articulation to a baccalaureate degree.

3 *Community College - University Articulation*

ASSEMBLY BILL 3639 called on the Commission to involve the California State University, the University of California, and California's independent colleges and universities in its study of the feasibility of extending career education programs to the baccalaureate degree.

Commission staff did so by securing representatives of the California State University, the University of California, and regionally accredited independent California colleges and universities to serve on the advisory committee, together with those from the Chancellor's Office for the Community Colleges and the State Department of Education, and by consulting with these segments between committee meetings.

For reasons of both history and differentiation of mission and function that are reflected in their undergraduate curricular emphases, these three university segments might be expected to play quite different roles in any plans to develop articulated career education programs leading to the baccalaureate.

- The California State University has historically enrolled more Community College transfer students than native freshmen and has awarded at least half of its baccalaureate degrees to such transfer students. Programmatically, it has been preeminent in the preparation of public school teachers and, for those not choosing teaching careers, in offering undergraduate career preparation in business, engineering, agriculture, and many other fields of work as well as the liberal arts and sciences.
- The University of California, on the other hand, enrolls many more freshmen than Community College transfer students and awards most of its baccalaureate degrees in the arts and sciences -- the major exception being engineering.
- California's independent colleges and universities are more diverse on almost any measure than its public institutions. In particular, they differ in regard to size and proportion of new students who transfer from Community Colleges -- although almost all enroll at least a few each year -- and in their emphasis on liberal arts versus career-related undergraduate curricula. Those that are most highly career-oriented, such as Cogswell and Humphreys Colleges, tend to enroll more freshmen in four-year programs than transfer students at the upper-division level, but other comprehensive universities offer strong programs in business and other undergraduate career-oriented majors that are articulated with Community College programs.

Because of these differences in the three university segments that are related to the question of feasibility of developing articulated career education programs, they are treated differently in this report. The University of California and the Association of Independent California Colleges and Universities have each submitted brief statements for the report concerning the role of their campuses and institutions in developing and offering career-oriented articulated programs leading to the baccalaureate degree for students who transfer from Community College. In contrast, the State University was not asked to submit a statement because its present level of involvement in articulation with Community Colleges appears to be adequate evidence of feasibility for the further development of such programs.

The California State University

Information about existing articulated career education programs between California's Community Colleges and the California State University is given in Display 4 on pages 14-15, which shows 22 career-oriented fields in which a Commission survey of 48 Community College catalogs yielded information about specific career education programs that have been articulated with State University campuses. (An additional 43 catalogs were less specific about such articulation in sections dealing with transfer, while having in common with the 48 information

DISPLAY 4 Career Education Programs That 48 California Community Colleges Have Articulated

Community College	Accounting	Agriculture	Architecture	Banking and Finance	Business	Computer Science	Criminal Justice	Data Processing
Allan Hancock College	X	X	X		X	X	X	X
American River College	X			X	X			X
Antelope Valley College		X			X	X		
Butte College		X			X	X		
Cabrillo College			X		X			
Cañada College	X				X		X	
Cerritos College			X		X		X	
College of Alameda					X			
College of San Mateo	X	X	X		X	X	X	
College of the Desert		X	X		X		X	X
Compton College	X		X	X	X		X	X
Contra Costa College					X	X	X	
Crafton Hills College	X	X			X	X	X	
Cuyamaca College			X			X		
Cypress College	X				X	X		
East Los Angeles College	X		X		X		X	
Evergreen Valley College		X	X		X	X	X	
Feather River College	X				X	X	X	
Fresno City College	X		X		X	X	X	X
Fullerton College		X	X		X	X		
Glendale Community College		X	X		X	X	X	
Indian Valley College	X			X	X		X	X
Kings River College	X	X		X		X	X	
Long Beach Community College	X			X	X	X	X	
Los Angeles Harbor College	X	X	X		X	X	X	X
Los Angeles Mission College	X		X		X	X	X	X
Marin Community College			X		X	X	X	
Mendocino College		X			X	X	X	
Merced College		X		X	X		X	
Mission College					X	X		
Modesto Junior College	X	X	X	X	X		X	
Monterey Peninsula College					X		X	X
Moorpark College		X			X	X	X	
Mt. San Jacinto College					X	X		
Napa Valley College						X		X
Orange Coast College	X	X	X		X	X		
Oxnard College	X	X		X	X			
Palo Verde Community College	X	X			X	X		
Rancho Santiago College		X	X		X	X	X	
Riverside Community College	X				X	X	X	
San Bernardino Valley College	X		X		X	X	X	
San Jose City College							X	
Rio Hondo College				X		X	X	X
Santa Barbara City College						X	X	X
Santa Monica College	X		X		X		X	X
Southwestern College	X		X		X	X	X	
Ventura College	X	X		X	X		X	
West Hills College		X			X	X	X	
Total Sample	24	21	21	10	42	32	34	13

Source: California Postsecondary Education commission staff analysis of catalogs.

Drafting	Early Childhood Education	Electronics	Engineering	Fashion Careers	Horticulture	Home Economics	Interior Design	Management	Marketing	Nursing	Physical Therapy	Teaching	Theatre Arts
	X	X	X			X				X	X	X	
X	X	X	X	X	X		X	X	X	X			X
			X			X	X				X	X	
			X			X				X		X	X
			X			X				X			X
	X						X	X	X				
X	X		X	X	X	X				X			X
				X									X
X		X	X	X	X		X	X	X	X	X		
	X		X			X	X			X			
X		X	X					X	X	X			X
			X							X		X	
									X	X		X	X
X		X	X										
			X				X		X	X			
		X	X	X						X		X	X
			X			X	X			X	X		X
	X									X		X	X
X	X	X	X			X			X	X			
	X		X	X	X	X				X	X	X	X
	X		X				X			X	X		X
	X							X		X		X	X
			X	X		X		X	X	X			X
	X	X	X	X	X	X	X	X	X	X		X	X
	X	X	X				X	X	X	X			X
	X	X	X					X	X	X			X
	X		X				X			X	X		X
							X				X		X
	X		X	X			X	X		X		X	X
			X					X	X	X		X	
X	X		X				X	X	X	X			X
X		X				X				X			X
	X	X	X				X			X		X	X
		X	X					X		X			X
					X					X		X	
		X	X			X		X	X	X	X	X	X
	X	X				X		X	X	X	X	X	X
	X		X						X				X
	X		X							X	X	X	X
			X			X					X	X	X
	X	X	X	X					X	X	X	X	X
			X			X	X			X		X	X
	X		X				X			X		X	X
			X							X			X
X		X	X	X		X	X	X		X			X
		X	X			X		X	X	X			X
X	X	X	X	X	X	X		X		X			
	X		X							X		X	
11	24	19	39	12	7	21	17	18	18	40	13	24	35

about general education and other transfer requirements.)

The 22 programs include some in which at least a baccalaureate degree is required for entry-level professional employment -- for example, engineering and teaching -- but most lead to some type of employment opportunities after either the associate or the baccalaureate degree.

Among the 48 colleges, 42 described articulated programs in business in their catalogs, as did 40 in nursing, 39 in engineering, 35 in theater arts, 34 in criminal justice, 32 in computer science, and 24 in teaching. A major problem in performing this analysis, however, was the lack of consistency in the location and form in which Community Colleges provide articulation information in their catalogs. Because of this wide variation, the information in Display 4 should be regarded as indicative, rather than definitive.

Disciplinary choices of transfer students

Numbers and percentages of baccalaureate degrees that the State University awarded to Community College transfer students in 1985-86 are shown by sex in Displays 5 and 6 on pages 17-18, along with comparable data for the University of California. Caution needs to be exercised in interpreting these data, however, in that students whose last institution attended before enrolling in the State University was a Community College may have attended one or more other institution for their lower-division work. These degrees account for about 50 percent of all State University baccalaureate degrees awarded that year, with 22 percent awarded to native and about 28 percent to other transfer students.

Business and management majors accounted for 38 percent of the baccalaureate degrees awarded to the total group of Community College transfer students, followed by engineering and related technologies with 10 percent. The 13 fields most directly related to career preparation -- engineering, visual and performing arts, business, computer and information systems, architecture and environmental design, agriculture, communications, renewable natural resources, home economics, health sciences, education, parks and recreation, and the protective services -- accounted for almost 70 percent of the degrees awarded to these transfer students. On the other hand, 6 percent were awarded in the social sciences and 10 percent in letters, general studies, and interdisciplinary studies, which ranked high among transfer students who graduated from the University. Of the approximately 30 percent of the transfer students who received degrees in the liberal arts and sciences, an unknown percentage were preparing to teach in elementary or secondary schools in credential programs.

Degrees in business and management ranked first for both men and women among those awarded to Community College transfer students, although the number awarded to men was 5 percentage points higher than that awarded to women. The largest sex difference in degrees granted was in engineering, with 18 percent of all degrees awarded to men and 2 percent of those to women. Four fields in which the percentage awarded to women was higher than the percentage awarded to men were general studies (10 and 2 percent, respectively), health sciences (8 and 1 percent), psychology (7 and 3 percent), and home economics (3 and less than 1 percent).

While the percentage of men who transferred from Community Colleges and earned State University degrees in majors leading most directly to employment was larger than that of women (75 and 63 percent, respectively), the percentage of women receiving degrees in other majors while preparing for teaching is probably large enough to reduce or eliminate this sex difference in degrees granted.

Implications of the data

In summary, the State University appears to be more ready than the University or independent colleges and universities to begin developing extended articulation programs that would include high school as well as Community College courses and programs, given the number and range of programs that are already articulated and the flow of Community College students into the State University and their attainment of baccalaureate degrees. Problems remain of reaching agreement on a common definition of a baccalaureate-level course in the lower division and also of applying agreed-upon standards for associate degree-credit courses to those offered historically in federally-supported vocational curricula. In addition, not all Community College curricula can or should be articulated with baccalaureate-degree

DISPLAY 5 *Baccalaureate Degrees Awarded to Community College Transfer Students by the California State University and the University of California, 1985-86, by Discipline*

Discipline	The California State University Number	Percent	University of California Number	Percent
Agriculture				
Men	316	3%	46	2%
Women	145	1	20	1
Total	461	2	66	1
Business and Management				
Men	3,353	31	156	6
Women	3,017	26	93	4
Total	6,370	28	249	5
Communication				
Men	569	5	19	1
Women	665	6	47	2
Total	1,234	6	66	1
Computer and Information Sciences				
Men	512	5	111	3
Women	256	2	62	3
Total	768	3	173	4
Education				
Men	364	3	7	<1
Women	577	5	10	<1
Total	941	4	17	<1
Engineering and Related Techologies				
Men	1,974	18	362	14
Women	239	2	68	3
Total	2,213	10	430	9
Foreign Languages				
Men	44	1	27	1
Women	108	1	76	3
Total	152	1	103	2
General Studies				
Men	204	2	42	2
Women	1,220	10	86	4
Total	1,424	6	128	3
Health Sciences				
Men	151	1	2	<1
Women	987	8	16	<1
Total	1,138	5	18	<1
Letters				
Men	253	2	124	5
Women	496	4	215	10
Total	749	3	339	7
Life Sciences				
Men	212	2%	263	10%
Women	267	2	211	9
Total	479	2	474	10
Mathematics				
Men	149	1	114	4
Women	96	1	89	4
Total	245	1	203	4
Multi-Interdisciplinary Studies				
Men	52	1	144	6
Women	81	1	137	6
Total	133	1	281	6
Physical Sciences				
Men	272	3	163	6
Women	82	1	59	3
Total	354	2	222	5
Psychology				
Men	320	3	124	5
Women	811	7	250	11
Total	1,131	5	374	8
Social Sciences				
Men	963	9	616	24
Women	803	7	495	22
Total	1,766	8	1,111	22
Visual and Performing Arts				
Men	374	3	127	5
Women	561	5	183	8
Total	935	4	310	6
Other*				
Men	776	7	153	6
Women	1,164	11	134	6
Total	1,940	9	287	6
Total				
Men	10,858	100%	2,600	100%
Women	11,576	100	2,251	100
Total	22,434	100	4,851	100

* "Other" disciplines are shown in Display 6 on the next page.

Source: California Postsecondary Education Commission.

DISPLAY 6 *Baccalaureate Degrees Awarded to Community College Transfer Students by the California State University and the University of California, 1985-86, in Disciplines Classified as "Other" in Display 5*

Discipline	The California State University		University of California	
	Number	Percent	Number	Percent
Architecture and Environmental Design				
Men	133	1%	56	2%
Women	44	<1	20	1
Total	177	1	76	2
Areas and Ethnic Studies				
Men	19	<1	11	<1
Women	53	<1	31	1
Total	72	<1	42	1
Home Economics				
Men	11	<1	2	<1
Women	413	4	27	1
Total	424	2	29	1
Law				
Men	--	--	25	1
Women	--	--	19	1
Total	--	--	44	1
Parks and Recreation				
Men	81	1	--	--
Women	147	1	--	--
Total	228	1	--	--
Philosophy and Religion				
Men	39	<1%	24	1%
Women	19	<1	9	<1
Total	58	<1	33	1
Protective Services				
Men	282	3	--	--
Women	162	1	--	--
Total	444	2	--	--
Public Affairs				
Men	114	1	7	<1
Women	284	2	7	<1
Total	398	2	14	<1
Renewable Natural Resources				
Men	97	1	27	1
Women	42	<1	20	1
Total	139	1	47	1
Total				
Men	776	7%	152	6%
Women	1,164	11	133	6
Total	1,940	9	285	6

Source: California Postsecondary Education Commission.

programs. While identifying those with little potential is beyond the scope of this study, it is clear that some programs which high schools and Community Colleges are now articulating have little potential for extension to the baccalaureate degree since there are no equivalent courses or programs in the State University -- most notably in automotive mechanics and related options. Some business options in which high schools and Community Colleges have identified equivalent courses also appear to require the upgrading of outcomes and objectives if they are to be considered for baccalaureate or transfer credit -- most notably typing and word processing.

Foreign language courses appear to offer a useful precedent or model, since they are taught at both the high school and college and university levels, with equivalent beginning courses identified on the basis of student outcomes.

Statewide and regional (north/south) activities that produced articulation agreements or models under the leadership of the long-time Articulation Council of California appear to have been replaced by more localized activities involving Community Colleges and the campuses to which the largest numbers of their students transfer, at least in the technologies and professions. The major exceptions to this observation are engineering, with multi-campus and segment articulation activities persisting after the termination of the Articulation Council as such, and home economics, where six State University cam-

puses and one independent institution have entered into an agreement with regard to ten courses taught at the lower-division level, with four more State University campuses expected to join in the agreement for the purpose of acquiring California Articulation Numbers (CANs). Additional information regarding this development appears in Appendix C on pages 33-37.

University of California

In 1985-86, the University of California awarded 22 percent of its baccalaureate degrees to students who had attended a Community College, 50 percent to students who had begun as freshmen and completed their undergraduate work on the same University campus, and 28 percent to students who had transferred from four-year institutions (including other campuses of the University).

Disciplinary choices of transfer students

Numbers of baccalaureate degrees that the University awarded in 1985-86 to students who had transferred from Community Colleges are shown by sex and discipline in Displays 5 and 6 on pages 20-21 above, along with those awarded by the State University. For men and women combined, the social sciences accounted for the largest number and percentage of degrees granted in that year to these students (1,111 or 22 percent), followed by the life sciences (474, or 10 percent), and engineering (430, or 9 percent). About 30 percent of all baccalaureate degrees awarded to these students were in the 11 fields most likely to involve preparation for careers -- engineering, visual and performing arts, business, computer and information systems, architecture and environmental design, agriculture, communications, renewable natural resources, home economics, health sciences, and education, listed from largest to smallest numbers of degrees.

The major difference between men and women in degrees awarded is in engineering, with 14 percent of the degrees awarded to men and 3 percent of those awarded to women. In contrast, 11 percent of the women and 5 percent of the men earned degrees in psychology, and 10 percent of the women and 5 percent of the men in letters. Looked at another way, 34 percent of the degrees awarded to men were in the 11 fields most directly related to careers, compared with 25 percent of those awarded to women, while 20 percent of the degrees awarded to women were in the categories of general studies, letters, or interdisciplinary studies, compared with 13 percent of those awarded to men.

Regarding articulated career programs, the University submitted the following statement for use in this report:

> The University of California is interested in exploring the feasibility of developing articulated career programs with Community Colleges in the areas of Administration of Justice, Agriculture, Architecture, Business Administration, Engineering, and Computer/Information Systems. At present, these areas appear to be the ones where the University could contribute most in terms of articulated career programs. However, in reviewing the feasibility of career programs, the University will have to take into consideration: (a) existing campus degree requirements for each of the areas cited, (b) how these requirements can best be satisfied by students at the Community Colleges, and (c) how the proposed general education transfer core curriculum can be incorporated in each articulated career program. Finally, it is expected that students entering an articulated career program at the University will have satisfied all admissions requirements and will have completed lower-division transferable coursework in preparation for their intended upper-division program at the University of California.

Implications of the data

Community College students tend to be more likely to seek education related to employment opportunities than freshmen enrolling in four-year institutions -- particularly those entering the University and most independent institutions. With the exception of engineering, the University offers comparatively few opportunities for specific career preparation at the undergraduate level. Numbers of campuses offering such programs are limited, as are the numbers admitted to the programs. The problem appears to be more serious for women than men because of women's continuing underenrollment in engineering.

The implication is *not* that the University should develop new or expand existing programs that are associated with career preparation. Instead, the University may wish to assist Community Colleges in making clearer the career opportunities that transfer students in the social sciences, letters, and psychology, for example, may avail themselves of with a baccalaureate degree.

Independent colleges and universities

The President of the Association of Independent California Colleges and Universities submitted the following statement for use in this report.

> A study of AICCU's membership roster reveals that 12 of 62 (or about 20 percent) are heavily involved in career education programs. For purposes of this letter, I define a career education program as one which leads students toward a specific career field which is not a profession requiring graduate education. The 12 institutions listed below all fit this requirement. To a great extent they serve a student population of working adults.
>
> These 12 institutions enrolled two-thirds of the 9,300 community college students transferring to the independent sector during the 1985-86 academic year. However, in terms of overall FTE enrollment, they comprise only 15 percent of the Association's total student population. They have developed curricula which serve students with a wide variety of academic needs. From training in art and design to nursing to court reporting, the programs of these colleges and institutes are oriented toward career preparation.
>
> By and large, the programs offered by these institutions are more closely articulated with the employment needs of private industry than they are with K-12 or community college curricula. For the most part, these colleges articulate with their local community colleges and local high school vocational programs via the "lone ranger" approach. This implies that they develop articulation agreements with their main feeder schools on an "as needed" basis.
>
> The only recent study of articulation agreements between California's independent colleges and the community colleges or K-12 segments was conducted by Joan Nay of U.S.C. for the Articulation Council during the 1985-86 academic year. Unfortunately, the response rate from the institutions listed below to the survey was quite poor, and thus there remains no comprehensive record of the number or variety of articulation agreements made by these institutions.
>
> This reality underlines a basic point of concern with respect to institutional research based on the information reported (or not reported) by colleges and universities which primarily serve student populations of working adults. Since most of these colleges are still developing and modifying their programs and curricula, they have not consistently put in place record keeping systems which allow for easy retrieval of answers to research questions aimed at tracking student flow. This problem makes it difficult to know just where individual institutions stand at any given time with respect to articulation.

The 12 member institutions of the Association of Independent California Colleges and Universities identified by its staff as heavily involved in career education and training are these:

California College of Arts and Crafts
Cogswell Polytechnical College
College for Developmental Studies
Golden Gate University
Humphreys College
John F. Kennedy University
National University
Northrop University
Samuel Merritt College
West Coast University
University of West Los Angeles
Woodbury University.

4 *High School Through University Articulation*

Current status in California

There appears to be relatively little activity in California at this time regarding the vertical extension to the baccalaureate level of existing types of high school-Community College linkages of career education programs. In fact, conditions may be mediating against such a thrust, given the recent changes in freshman admission requirements for the public universities, recommendations from the Commission for the Review of the Master Plan for Higher Education (1987, pp. 16, 31) and other groups for the development of a common core transfer curriculum, and increased interest in distinguishing between associate degrees for transfer on the one hand and preparation for employment on the other.

Six major factors appear to be responsible for the present lack of initiative in linking career education programs at the three levels of education.

1. *Increased Community College-University articulation*

Until recently, Community College articulation efforts focused largely on linkages with the University and the State University and tended to overlook linkages with high schools, particularly in regard to transfer programs and practices. Three reasons may account for this choice of emphasis.

- First, the transfer function increased in importance following the preparation of the 1960 Master Plan for Higher Education in California and later the State's concerns about increasing the enrollment and persistence of underrepresented ethnic minority students in higher education -- the latter at a time when numbers of Community College transfer students to the public universities were decreasing significantly.

- Second, the Community College student population has been changing so as to be older, more part time, with an increasing amount of previous postsecondary education, as well as more diversified ethnically, with a concomitant reduction -- at least proportionally -- in the enrollment of recent high school graduates.

- Third, faculties of the higher education segments began to work together on a regular basis on problems of course patterns to meet new State University general education requirements, statements of competencies to be expected of high school graduates enrolling in higher education, and standards and definitions for college-level, degree-credit courses.

2. *Nature of high school-Community College articulation*

As evidenced by the survey information, Community Colleges have begun again to engage in articulation activities with nearby high schools but usually not in the context of a continuum from high school through the Community College to a baccalaureate degree. Two kinds of emphasis appear to be dominant in local articulation programs: (1) articulation in regard to basic skills assessment and readiness for Community College-level work, and (2) articulation of vocational courses and programs -- particularly course equivalencies and statements of vocational skill objectives. The latter emphasis may have been given some impetus by the work of the president of the American Association of Community and Junior Colleges in promoting the development of high school/Community College technical programs that feature strong high school preparation in mathematics and science for two-year technical degrees leading to employment, rather than transfer -- programs for what he called "the neglected majority" of high school graduates who would not seek a baccalaureate degree (Parnell, 1986).

Finally, the availability of federal vocational education funds to support the development of articulated high school-Community College career education programs provided a strong incentive to these two levels to do so, but the unavailability of special funds to involve four-year institutions in such projects has

been a disincentive until now. Joint planning by the three levels of education might have been preferable in developing linkages to the baccalaureate degree, and the lack of special funds to do so may have resulted in high school-Community College vocational program linkages that will be difficult to extend to the four-year colleges and universities.

3. *Participation in the California Articulation Council*

Another factor that may have inhibited the three-level articulation of career education programs is the lack of participation of representatives of secondary education in the California Articulation Council in recent years. The Council has been disestablished as a result of the creation of the Intersegmental Coordinating Council under the California Education Round Table -- a voluntary organization that includes all segments. Two of the clusters that are being formed under the Council will deal with (1) transfer and articulation and (2) curriculum and assessment.

4. *The "upside-down curriculum"*

A type of curriculum organization that is conducive to articulation in career education is referred to as the "upside down" curriculum, in which employment-related skill courses are taught in the lower division and general education or breadth courses at the upper-division level. Under this arrangement, high school students acquire strong preparation in the academic skills courses that are prerequisite to career-related courses, and they continue to build these academic skills as they progress through an articulated curriculum.

California Polytechnic State Universities have been perhaps the only public institutions in California to adopt this curricular approach in their technical-professional programs but, for reasons that are not entirely clear, articulation with Community Colleges did not work well with this type of curricular organization in the past. Other State University campuses have preferred the more traditional approach of requiring general education and academic skill courses in the lower division, followed by career preparation in the upper division -- often in the same kinds of courses that Community Colleges offer at the lower-division level.

5. *External degree programs*

An external-degree option permits mature students to "assemble" courses and educational or work experiences from a variety of sources -- including external examinations -- in meeting requirements for a degree that is awarded by an agency or organization which is authorized and accredited to do so. The Regents of the University of the State of New York (a non-campus entity) has been awarding such degrees for over a decade, most notably in business administration and nursing, and the Consortium of the California State University did so until recently. But unlike states such as New York, California does not now have a State-supported external degree-program option that is independent of a particular State University or University campus, now that the State University Consortium has returned to a campus-based program.

6. *Nature of the baccalaureate degree*

A final factor is the lack of clarity about the kind of baccalaureate degree to be awarded to students completing extended career education programs, particularly if they do so in an attendance pattern that involves stopping out for employment and moving up a career ladder from employment at a technical level to one involving supervision and management. Universities are understandably reluctant to award degrees in majors in which students have had little upper-division work at their institution, and the success of specially created degrees for such transfer students has been limited.

Concluding comments

These six factors may have inhibited the development of career education programs that begin in high school and extend to the baccalaureate degree. None represent insurmountable barriers or problems, however, and some may become irrelevant as work is undertaken to develop such programs in California's high schools, colleges, and universities.

Information from other states

In 1987, Commission staff conducted a national study of transfer, articulation, and collaboration between two- and four-year institutions that was funded by the Ford Foundation (California Postsecondary Education Commission, 1987a). One of five major areas for inquiry was the articulation of vocational/technical education programs, which was expanded in scope to include the high school portion of such programs for use in this study.

One major finding of the Ford-Foundation project was that articulation of career-oriented curricula in other states tends to involve *either* high schools and two-year postsecondary institutions (technical institutes and area vocational schools, as well as community colleges) *or* two- and four-year postsecondary institutions, but any "2+2+2" linkages tend to involve strong academic preparation at the high school level for technical or pre-professional study in the two-year college, rather than vocational courses in high school.

Arizona offers a model for high school-community college articulation in vocational education that was mandated by the Arizona Vocation Education Act of 1982. Under this act, the Maricopa Community Colleges in Phoenix have worked extensively with high school districts in their county to (1) provide certain types of training under contract that would not otherwise be available to these students -- for example, in electronics and fabrication; (2) develop course equivalencies and competency tests to enable high school graduates to receive college credit for high school courses or advanced placement, or both -- for example, in nursing; (3) design joint programs that include joint use of facilities as well as course equivalencies and sequences -- for example, in food services; and (4) develop regional agreements that are broader than high school-to-college campus articulation -- for example, in machine shop and drafting.

Arizona also offers models for community college-university articulation of career education programs -- most notably between the Maricopa Community Colleges and Arizona State University in a broad range of business majors. At the state level, in February 1983 the Joint Conference Committee of the Arizona State Board of Regents (the governing board for all public universities) and the Board of Directors for Community Colleges established the Academic Program Articulation Steering Committee which in turn works through task forces to coordinate articulation in various fields of study.

Illinois provides an example of an attempt to articulate career education programs through the baccalaureate degree offered by Southern Illinois University at Carbondale. Options are offered to community college transfer students in agriculture, business, industrial technology, and teaching.

In Washington State, a number of institutions have worked out special transfer programs in which community college students with majors in the human services or law enforcement may continue toward a baccalaureate degree in what are called "Alternatives for the Transfer of Occupational Programs." The structure may involve an "upside-down," "supplementary," or "block transfer" curriculum.

In New York State, consideration is being given to a proposal to permit some of the two-year technical colleges that are a part of the State University of New York to expand selected programs to the baccalaureate degree because of a lack of opportunity for many of their two-year graduates to continue their education in some parts of the state at public four-year institutions. A precedent was established some years ago when the state's Fashion Institute of Technology expanded its curriculum to offer both baccalaureate and master's degrees and when New York City Community College became a four-year technical college offering programs that vary in length. There has been no such movement in California to date, but this and other options being experimented with in New York need to be kept in mind in considering ways to develop articulated career programs. Graduates of two-year technical programs in New York State colleges also transfer to independent institutions in that state in larger numbers than in California -- particularly to institutions that tend to be underenrolled and willing to grant full credit for lower-division work completed in the two-year colleges.

Finally, the National Center for Research in Vocational Education has recently published the findings of a study of articulation between what it calls "for-profit private occupational schools" and other types of institutions, including community colleges and baccalaureate degree-granting institutions (Lerner, 1987). Although Assembly Bill 3639 did not call for participation of California's private vocationally-ori-

ented institutions in the Commission's study of articulated career education programs, the role of these institutions in providing postsecondary educational opportunities in California is significant, and the kind of articulation described in the monograph needs to be considered in future planning.

5 *Conclusions and Recommendations*

Conclusions

Feasibility of articulated career education programs through the baccalaureate degree

The State Board of Education and the Board of Governors of the California Community Colleges concluded that the high school-Community College portion of articulated "2+2+2" career education programs was feasible when they approved the use of federal vocational funds to support the development and implementation of 21 pilot projects over a three-year period. Only one of these projects is nearing completion, but the Commission has no reason to question the probable success of this program to link more effectively high school-Community College career education.

The concept of a six-year articulated career education program leading to a baccalaureate degree is relatively new and appears to be feasible, at least in selected fields in which Community Colleges have reached articulation agreements with institutions that award the baccalaureate degree. However, with the notable exception of electronics, this kind of articulation appears more feasible as an extension of Community College-university programs to include high school preparation, rather than the extension of high school-Community College programs to the baccalaureate degree, as suggested in Assembly Bill 3639. A major reason for this conclusion is the need for stronger high school preparation in mathematics, science, and communication skills for students who continue their career education in a Community College and beyond than was required in the past of vocationally oriented students. This conclusion about strengthened preparation is not unique to this report and is consistent with current educational reforms of the high school curriculum and graduation requirements. Thus the Commission concludes that AB 3639 did not anticipate the development of six-year programs of "vocational education" but, instead, a continuum of basic skill, academic, and career-oriented courses that would begin no later than the junior year in high school and enable students to continue to a baccalaureate degree without insurmountable barriers and hurdles.

Supporting these conclusions about feasibility is the observation that such programs are needed to help young people develop their full educational and career potential, *not* because (1) counseling has failed at some point to direct them into the appropriate high school or Community College curriculum or (2) they changed their mind about their educational and career goals. "Tracking" young students into vocational versus academic courses and programs is now a discredited practice because of its negative impact on the disadvantaged, and what AB 3639 proposed should open up new paths for Californians to advance in their careers.

Need for better student information

Very little is known about the students who have been enrolling in career education programs that are articulated at the high school-Community College and the Community College-university levels -- the primary exceptions being gross numbers of high school students enrolled in such programs and courses and numbers of Community College transfer students who are awarded baccalaureate degrees in various career fields. The major gap is in logitudinal information about students who begin articulated programs in high school and continue after high school graduation into the Community College portion of the program. Similarly, virtually nothing is known about the attendance patterns and career and curriculum choices of Community College students who transfer to California's four-year colleges and universities. Proposals to extend currently articulated career education programs need to take into account the needs and characteristics of students for whom they would be planned, as well as the needs of potential employers and the professions or careers for which students are preparing.

Need for definitions and standards

Community Colleges use widely varying definitions of articulation in offering career education opportunities for high school students, as evidenced by their responses to the statewide survey of practices and plans. Many of the reported practices imply acceleration or compression of high school and Community College programs into less than four years and raise questions about the appropriateness of some courses for associate or especially baccalaureate-degree credit in programs to be articulated with four-year institutions.

Agreement by faculties in the three public segments of higher education on a definition of a baccalaureate-level course will facilitate the kind of articulation under discussion in this report, especially if accompanied by the full implementation of the Board of Governors' new standards for college-credit courses offered at the lower-division level.

Adult non-credit education

The finding that some Community Colleges are articulating their degree-credit vocational offerings with those of Regional Occupational Centers/Programs (ROC/Ps) and other deliverers of non-credit adult education needs amplification beyond what can be done in this study. These largely unanticipated linkages are important because of their implications for standards for the various types of credit and non-credit courses and the desirability of facilitating the movement of adult students from non-credit to credit courses and programs without having to repeat coursework.

On a positive note, some of the instructional features of the ROC/Ps may have applicability to the extended career education programs, in terms of the intermixing of cooperative work experience and academic coursework.

The broader context for career education

Changes are occurring in curriculum and requirements for progressing from high school to postsecondary education and from Community Colleges to baccalaureate institutions that need to be taken into account in developing articulated career education. At the high school level, new academic graduation requirements increase graduates' probability of eligibility for freshman admission to the State University but decrease opportunities for starting career education before high school graduation. Furthermore, the Community Colleges' thrust toward a common core curriculum and perhaps an associate in arts degree for transfer purposes may put transfer and career-oriented students in different tracks and reduce the feasibility of developing Community College career education opportunities that lead to a baccalaureate degree, particularly for students who did not qualify for State University admission when they graduated from high school.

The California Articulation Number system (CAN)

CAN should be useful in developing and extending career education articulation programs but its emphasis to date has been on a few core courses that are common requirements for most lower-division students in all segments of higher education. The principles under which CAN operates may need to be changed to encompass career-related courses that the University does not offer for undergraduates.

Participation by the University of California and independent colleges and universities

Although this report focuses to a considerable extent on Community College-State University linkages, the potential role and contributions of the University and California's independent institutions in developing articulated career-education programs is significant. What now appear to be barriers and disincentives to their participation can be overcome with the development of new models for career preparation.

Need for State funding

Because federal funds may not be used for baccalaureate education, the State needs to provide funds to develop articulated programs leading to baccalaureate degrees for Community College students who complete two-year technical programs after appropriate high school preparation. Such programs appear to be feasible but are not likely to be developed without special State funding for pilot projects.

However, additional State funding does not appear to be needed *at this time* for pilot projects to develop articulated high school-Community College career

education programs because of the commitment of federal vocational education funds for this purpose that are now for the most part in early stages of development.

Recommendations from a previous report

The Commission calls attention to six recommendations in its November 1987 report, *Strengthening Transfer and Articulation Policies and Practices in California's Colleges and Universities* (pp. 35-38) that are pertinent to this report and are reproduced in Appendix D on page 39. They deal with the following topics:

- The need for the Governor and the Legislature to give broad policy direction to the segments regarding the flow of students from California's high schools through its colleges and universities;
- The role of the Intersegmental Coordinating Council in facilitating transfer and articulation;
- The desirability of campus-to-campus and regional articulation on a voluntary basis;
- The endorsement of the California Articulation Number (CAN) system;
- The need for strong high school subject-matter preparation for students planning to attend a Community College; and
- Procedures for segmental program review to insure articulation between levels and segments.

New recommendations

The following seven recommendations are made to the Governor, the Legislature, and the segments:

Recommendation to the Governor and the Legislature

Recommendation 1: The Governor and the Legislature should provide funds in the 1988-89 State budget to support the development of pilot articulated career-education projects ("2+2+2") along the general lines proposed in the Budget Change Proposal submitted by the Chancellor's Office for the Community Colleges.

The Commission suggests that provision be made to fund a number of different types of models -- for example, (1) an extension of an ongoing high school-Community College program, probably in electronics; (2) a program for students who "stop out" for employment at some time (or times) before completing a baccalaureate degree; (3) a University-linked program to meet the needs of transfer students in social science or general studies majors -- perhaps to prepare them for careers in the human services; (4) a project that would include one or more independent colleges and universities, perhaps using the California Academic Partnership Program (CAPP) as a model for funding; and (5) extension to the high schools of several programs that have been successfully articulated by Community Colleges and the State University.

Recommendation to the State Board of Education and the Board of Governors of the California Community Colleges

Recommendation 2: Recognizing the high cost of comprehensive longitudinal studies of students in career education programs, the Commission recommends that the Boards insure that specially funded pilot projects for articulated programs include an evaluation component that provides for student follow-up to and through the next higher level of education or to employment.

Recommendations to the Chancellor's Office of the California Community Colleges

Recommendation 3: The Chancellor's Office, in consultation with Community Colleges offering extensive coursework for high school students, should examine and make recommendations, where necessary, about (1) definitions of acceptable articulation practices in career education and (2) standards for vocational courses offered to high school students for college credit in

terms of both course prerequisites and competencies.

Recommendation 4: The Chancellor's Office, in consultation with Community Colleges that have adopted assessment/counseling/placement programs as part of the matriculation process, should consider and make recommendations about ways that high school students enrolling in Community College courses for credit should be subject to the assessment procedures and standards that apply to regularly enrolled students.

Recommendation 5: The Chancellor's Office should analyze and evaluate the kind of high school-Community College articulation that involves Regional Occupational Centers/Programs and other non-credit adult education providers to determine (1) their potential for contributing to extended career education leading to a baccalaureate degree, and (2) barriers to student progress from non-credit to credit programs for career preparation which should be reduced or eliminated.

Recommendation to the California Articulation Number Coordinating Committee

Recommendation 6: The Coordinating Committee should make whatever changes are necessary in its operating principles to allow and encourage the assignment of CAN numbers to career education courses that are offered by the Community Colleges and the State University but not necessarily by the University.

Recommendation to the Intersegmental Coordinating Council

Recommendation 7: The Council should consider the feasibility of its becoming a computerized clearinghouse for information about articulated career education programs or, if necessary, make a recommendation to the California Education Round Table about some alternative placement of this service.

APPENDIX A — *Assembly Bill 3639 (Bradley, 1986)*

Assembly Bill No. 3639

CHAPTER 1138

An act relating to education, and making an appropriation therefor.

[Approved by Governor September 24, 1986. Filed with Secretary of State September 25, 1986.]

LEGISLATIVE COUNSEL'S DIGEST

AB 3639, Bradley. Vocational education.

Existing law authorizes high schools, the California Community Colleges, and the California State University to offer courses of instruction in vocational education.

This bill would require that governing boards of school districts and community college districts, in cooperation with the State Board of Education and the Board of Governors of the California Community Colleges, assess the feasibility of articulated "2+2" vocational and professional programs that lead to the associate degree and would thereby constitute a state-mandated local program. This bill would also require that the governing boards of school districts and community college districts work with the Trustees of the California State University and the Regents of the University of California to assess the feasibility of extending this form of articulated preparation to the baccalaureate degree and would thereby constitute a state-mandated local program. This bill would require the California Postsecondary Education Commission to coordinate this assessment. This bill would require the California Postsecondary Education Commission to prepare and submit a report, as specified, no later than January 1, 1988.

This bill would appropriate $15,000 to the California Postsecondary Education Commission for the purposes of coordinating the assessment and reporting to the Legislature no later than January 1, 1988.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Appropriation: yes.

The people of the State of California do enact as follows:

SECTION 1. It is the intent of the Legislature that the governing boards of school districts and community college districts, in cooperation with the State Board of Education and the Board of

Governors of the California Community Colleges, assess the feasibility of articulated "2+2" vocational and professional programs that lead to the associate degree and, further, that these boards work with the Trustees of the California State University and the Regents of the University of California to assess the feasibility of extending this form of articulated preparation to the baccalaureate degree. The California Postsecondary Education Commission shall coordinate this assessment.

SEC. 2. (a) No later than January 1, 1988, the California Postsecondary Education Commission shall do the following:

(1) Identify those articulated career programs currently being offered or planned in California between high schools and community colleges, and between the community colleges and public and independent four-year institutions.

(2) Review articulated career programs in other states and report on their effectiveness in various fields as determined by independent program evaluations done in those states.

(3) Review, with involvement of interested private sector employers and of faculty and curriculum specialists from the K–12 schools, community colleges, California State University, and the University of California, model curricula in selected career fields.

(4) Determine the barriers and obstacles to the implementation of these programs.

(5) Make recommendations for appropriate models for California, necessary changes in law, regulations, and program guidelines and, as the commission deems advisable, suggest pilot projects among specific sets of institutions in particular careers or professions.

(b) A report on the feasibility of establishing "2+2" vocational and professional programs, including recommendations, shall be prepared and submitted on or before January 1, 1988, by the California Postsecondary Education Commission to the Legislature, the Governor, the Superintendent of Public Instruction, the Board of Governors of the California Community Colleges, the California State University Trustees, and the University of California Regents.

SEC. 3. The sum of fifteen thousand dollars ($15,000) is hereby appropriated from the General Fund to the California Postsecondary Education Commission without regard to fiscal year for the purpose of coordinating the assessment required by Section 1 of this act, and for purposes of the report required under Section 2 of this act.

SEC. 3. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because this act is in accordance with the request of a local agency or school district which desired legislative authority to carry out the program specified in this act.

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APPENDIX B

Members of the Advisory Committee and Others Who Participated in its Meetings

Representing the University of California

Ed Apodaca
Carla Ferri
Deborah R. Friedman

Representing the California State University

Sally Loyd Casanova
Roger M. Swanson
Frank Young

Representing the California Community Colleges

Connie Anderson
Patricia Stanley

Representing the Independent California Colleges and Universities

Hans Giesecke

Representing the State Department of Education

Paul Gussman
Allan Holmes
John Iskra

APPENDIX C *Articulation of Home Economics Courses*

California State University, Chico

NOV 19, 1987

TO: HOME ECONOMICS HEADS

FROM: MARILYN D. AMBROSE, DIRECTOR
SCHOOL OF HOME ECONOMICS
CSU, CHICO

At the November 17, Articulation conference at CSU, Chico, six higher education institutions reached agreement on Home Economics course articulation for CAN: Chico, Long Beach, Northridge, Sacramento, San Francisco, and Point Loma Nazarene. Bonnie Rader shared agreements already reached with Cal Poly, Pomona.

The other campuses having Home Economics programs--Cal Poly, San Luis Obispo; San Diego State; Fresno State; and Humboldt State--were not able to be present. It was recommended that they be also given the opportunity to add any courses that would articulate with the CAN system. Therefore:

1. Those schools <u>not</u> at the articulation conference, please add your appropriate course numbers for each CAN course.

2. Those schools who <u>did</u> attend the Articulation Conference, please check accuracy of course numbers listed and make corrections as needed.

3. <u>All</u> heads, please sign your name as acceptance of this agreement or delete your name from the list.

4. ALL heads, please forward to the next head for signature.

5. The <u>last person</u> to sign, please forward to Chico, and I will send the original document to Carolyn Salls, CAN Coordinator. I will also send copies to each of you and copies to the Home Economics Articulation Committee.

6. ALL heads please expedite--it should not take long to review or add courses--the six universities on November 17, reached agreement in a little over an hour!

Thanks for your cooperation--a UNIFIED approach works miracles.

NOV 19, 1987

TO: CAROLYN SALLS, CAN COORDINATOR
SACRAMENTO, CA
COPY: HOME ECONOMICS ARTICULATION COMMITTEE

FROM: THE HOME ECONOMICS HEADS OF:
CSU, CHICO, MARILYN D. AMBROSE
CSU, LONG BEACH, BONNIE RADER
CSU, NORTHRIDGE, ALYCE BLACKMON
CSU, SACRAMENTO, JELINE WARE
CSU, POMONA, BONNIE FARMER
SAN FRANCISCO STATE, BILLIE LOU SANDS
CSU, SAN DIEGO, JOSEPH STAUSS
CSU, FRESNO, EUGENE KREBS
CAL POLY, SAN LOUIS OBISPO, BARBARA WEBER
CSU, HUMBOLDT, EMILIA TSCHANZ
POINT LOMA NAZARENE COLLEGE, KAY WILDER

RE: QUALIFYING HOME ECONOMICS COURSES FOR CAN

The Home Economics heads from the campuses listed above are in agreement to accept the following courses in lieu of their own, and, therefore, petition to have appropriate CAN numbers assigned to each of the following courses:

CAN H EC 2--NUTRITION

Chico	H E 025
Long Beach	H Ec 232
Northridge	H Ec 207
Sacramento	H E 10
San Francisco	CFS 252
Pomona	FN 205/FN 235
Point Loma	H Ec 15-225

CAN H EC 4--Intro, Design

Chico	ART 015A
Long Beach	H Ec 141
Northridge	H Ec 170
Sacramento	H E 20
San Francisco	--
Pomona	H E 299 (ART 150)
Point Loma	

CAN H EC 6--INTRO, TEXTILES

Chico	H E 035
Long Beach	--
Northridge	H Ec 161
Sacramento	H E 31
San Francisco	--
Pomona	H E 188
Point Loma	--

CAN H EC 8--PRINCIPLES OF FOOD

Chico	H E 020
Long Beach	H Ec 235
Northridge	H Ec 201
Sacramento	H E 11
San Francisco	CFS 150
Pomona	FN 121
Point Loma	H Ec 15-110

CAN H EC 10--Clothing Construction

Chico	--
Long Beach	H Ec 254
Northridge	H Ec 151 and 151L
Sacramento	H E 32
San Francisco	CFS 160
Pomona	H E 130
Point Loma	H E 15-211

CAN H EC 12--FAMILY RELATIONSHIPS

Chico	H E 055
Long Beach	--
Northridge	H Ec 232 (for HEC 12 and 14)
Sacramento	H E 50
San Francisco	CFS 225

CAN H EC 14--CHILD DEVELOPMENT

Chico	H E 050 or 052
Long Beach	H EC 111
Northridge	H Ec 232 (for CAN H EC 12 and 14)
Sacramento	H E 52
San Francisco	--
Pomona	H E 215
Point Loma	H Ec 15-120

H EC 16--LIFE MANAGEMENT

NONE

H EC 18--INTERIOR DESIGN FUNDAMENTALS

Chico	H E 040
Long Beach	H Ec 241
Pomona	H E 120
Northridge	H Ec 114
Sacramento	H E 121

H E 20--FASHION SELECTION

Chico	H E 032
Long Beach	H Ec 251
Pomona	H E 137
Northridge	H Ec 251
Sacramento	--
San Francisco	CFS 161
Point Loma	H E 15-210

H E 22--FASHION INDUSTRY/MARKETING

Chico	H E 137
Sacramento	H E 134
Long Beach	H Ec 451
Pomona	--
Northridge	H Ec 455
San Francisco	--

APPENDIX D

Selected Recommendations from "Strengthening Transfer and Articulation Policies and Practices in California's Colleges and Universities"

Recommendation 1: The Governor and the Legislature should give broad policy direction to the segments in matters relating to the flow of students from secondary schools through California's colleges and universities to the baccalaureate degree, including the use of Community Colleges for students with such degree objectives.

The Legislature should also request whatever periodic and special reports are necessary to ensure that its policies, priorities, and intentions are working satisfactorily to make the best use of the State's resources while promoting student access and retention.

Recommendation 2: The Intersegmental Coordinating Council should continue to function as a forum for discussion of and a source of information about transfer and articulation between and among colleges and universities while encouraging full participation by the secondary school segments.

The new Council should be responsible for keeping track of both voluntary and ratified course and program articulation agreements and for reporting to segmental administrators on the status of such agreements with respect to their ratification, recency of adoption, and potential for statewide segmental policy.

Recommendation 3: The Community Colleges, the State University, and the University should encourage their respective campuses to work with nearby public and private colleges and universities to reach voluntary agreements that govern both the flow of students and the articulation of courses and programs.

Recommendation 4: Participation in the California Articulation Number system, which began on a voluntary, regional basis, should be endorsed by the University, the State University, and the Community Colleges in order to encourage its continuing development in all regions and institutions in the State, with increased State funding if necessary.

Recommendation 6: The Board of Governors of the California Community Colleges, in consultation with the Academic Senate, should develop and adopt a statement of recommended secondary school subject-matter preparation for all students expecting to enroll in a Community College that would include core courses for students planning to seek a baccalaureate degree after completing the lower division.

Recommendation 11: Segmental review of proposals for new programs leading to an associate or baccalaureate degree should require that the campus making the proposal indicate the program's potential for articulation and any efforts that have been made to work out such articulation agreements with other institutions.

Furthermore, the University and the State University should review any future proposals for changes in transfer and articulation policies to see if they would limit or foreclose transfer options that are now available to Community College students in occupational and technical programs.

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CALIFORNIA POSTSECONDARY EDUCATION COMMISSION

THE California Postsecondary Education Commission is a citizen board established in 1974 by the Legislature and Governor to coordinate the efforts of California's colleges and universities and to provide independent, non-partisan policy analysis and recommendations to the Governor and Legislature.

Members of the Commission

The Commission consists of 15 members. Nine represent the general public, with three each appointed for six-year terms by the Governor, the Senate Rules Committee, and the Speaker of the Assembly. The other six represent the major segments of postsecondary education in California.

As of January 1988, the Commissioners representing the general public are:

Mim Andelson, Los Angeles
C. Thomas Dean, Long Beach, *Chairperson*
Henry Der, San Francisco
Seymour M. Farber, M.D., San Francisco
Lowell J. Paige, El Macero
Cruz Reynoso, Los Angeles, *Vice Chairperson*
Sharon N. Skog, Palo Alto
Thomas E. Stang, Los Angeles
Stephen P. Teale, M.D., Modesto

Representatives of the segments are:

Yori Wada, San Francisco; appointed by the Regents of the University of California

Claudia H. Hampton, Los Angeles; appointed by the Trustees of the California State University

Borgny Baird, Long Beach; appointed by the Board of Governors of the California Community Colleges

Harry Wugalter, Thousand Oaks; appointed by the Council for Private Postsecondary Educational Institutions

Kenneth L. Peters, Tarzana; appointed by the California State Board of Education

James B. Jamieson, San Luis Obispo; appointed by California's independent colleges and universities

Functions of the Commission

The Commission is charged by the Legislature and Governor to "assure the effective utilization of public postsecondary education resources, thereby eliminating waste and unnecessary duplication, and to promote diversity, innovation, and responsiveness to student and societal needs."

To this end, the Commission conducts independent reviews of matters affecting the 2,600 institutions of postsecondary education in California, including Community Colleges, four-year colleges, universities, and professional and occupational schools.

As an advisory planning and coordinating body, the Commission does not administer or govern any institutions, nor does it approve, authorize, or accredit any of them. Instead, it cooperates with other state agencies and non-governmental groups that perform these functions, while operating as an independent board with its own staff and its own specific duties of evaluation, coordination, and planning,

Operation of the Commission

The Commission holds regular meetings throughout the year at which it debates and takes action on staff studies and takes positions on proposed legislation affecting education beyond the high school in California. By law, the Commission's meetings are open to the public. Requests to address the Commission may be made by writing the Commission in advance or by submitting a request prior to the start of a meeting.

The Commission's day-to-day work is carried out by its staff in Sacramento, under the guidance of its executive director, William H. Pickens, who is appointed by the Commission.

The Commission publishes and distributes without charge some 40 to 50 reports each year on major issues confronting California postsecondary education. Recent reports are listed on the back cover.

Further information about the Commission, its meetings, its staff, and its publications may be obtained from the Commission offices at 1020 Twelfth Street, Third Floor, Sacramento, CA 98514; telephone (916) 445-7933.

ONE of a series of reports published by the Commission as part of its planning and coordinating responsibilities. Additional copies may be obtained without charge from the Publications Office, California Postsecondary Education Commission, Third Floor, 1020 Twelfth Street, Sacramento, California 95814-3985.

Recent reports of the Commission include:

87-40 Final Approval of San Diego State University's Proposal to Construct a North County Center: A Report to the Governor and Legislature Supplementing the Commission's February 1987 Conditional Approval of the Center (November 1987)

87-41 Strengthening Transfer and Articulation Policies and Practices in California's Colleges and Universities: Progress Since 1985 and Suggestions for the Future (November 1987)

87-42 Faculty Development from a State Perspective: A Staff Report to the California Postsecondary Education Commission in Response to Supplementary Language in the 1986 Budget Act (November 1987)

87-43 Evaluation of the California Student Opportunity and Access Program (Cal-SOAP): A Report to the Legislature and Governor in Response to Senate Bill 800 (Chapter 1199, Statutes of 1983) (December 1987)

87-44 The State's Role in Promoting Quality in Private Postsecondary Education: A Staff Prospectus for the Commission's Review of the Private Postsecondary Education Act of 1977, as Amended (December 1987)

87-45 Comments and Recommendations on *The Consortium of the California State University: A Report:* A Response to Supplemental Language in the 1987 Budget Act Regarding the Closure of the Consortium (December 1987)

87-46 Developments in Community College Finance: A Staff Report to the California Postsecondary Education Commission (December 1987)

87-47 Proposed Construction of the Permanent Off-Campus Center of California State University, Hayward, in Concord: A Report to the Governor and Legislature in Response to a Request for Capital Funds from the California State University for a Permanent Off-Campus Center in Contra Costa County (December 1987)

87-48 Articulating Career Education Programs from High School Through Community College to the Baccalaureate Degree: A Report to the Governor, Legislature, and Educational Community in Response to Assembly Bill 3639 (Chapter 1138, Statutes of 1986) (December 1987)

87-49 Education Offered via Telecommunications Trends, Issues, and State-Level Problems in Instructional Technology for Colleges and Universities (December 1987)

87-50 California Postsecondary Education Commission News, Number 3 [The third issue of the Commission's periodic newsletter] (December 1987)

88-1 Preparing for the Twenty-First Century: A Report on Higher Education in California, Requested by the Organization for Economic Cooperation and Development and Written by Clive P. Condren (February 1988)

88-2 Legislative Priorities of the Commission, 1988: A Report of the California Postsecondary Education Commission (February 1988)

88-3 The 1988-89 Governor's Budget: A Staff Report to the California Postsecondary Education Commission (February 1988)

88-4 Budgeting Faculty Instructional Resources in the University of California: A Report to the Legislature in Response to Supplemental Language in the 1987-88 Budget Act (February 1988)

88-5 The Appropriations Limit and Education: Report of the Executive Director to the California Postsecondary Education Commission, February 8, 1988 (February 1988)

88-6 Comments on Educational Equity Plans of the Segments: A Staff Report on the Development of Plans by the State Department of Education, the California State University, and the University of California to Achieve the Educational Equity Goals of Assembly Concurrent Resolution 83 (1984) (February 1988)